CDP-XE400/XE500

SERVICE MANUAL

US Model
CDP-XE400/XE500

AEP Model
UK Model
E Model
Australian Model
Chinese Model
CDP-XE500

Photo: CDP-XE500

Model Name Using Similar Mechanism	CDP-261/361
CD Mechanism Type	CDM14-5BD20
Base Unit Name	BU-5BD20

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser (λ =780 nm) Emission duration: continuous
Laser output	Max 44.6 µW* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up block with 7 mm aperture.
Frequency response	2 Hz to 20 kHz ± 0.5 dB
Signal-to-noise ratio	More than 100 dB
Dynamic range	More than 98 dB
Harmonic distortion	Less than 0.0045%
Channel separation	More than 95 dB

Outputs

	Jack type	Maximum output level	Load impedance
LINE OUT	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL) (CDP-XE500 only)	Optical output connector	-18 dBm	Wave length: 660 nm
PHONES	Stereo phone jack	10 mW	32 ohms

General

Power requirements

Where purchased	Power requirements
Europe	220 V - 230 V AC, 50/60 Hz
US	120 V AC, 60 Hz
Australia	240 V AC, 50 Hz
Other countries	110 V - 120 V or 220 V - 240 V AC, adjustable, 50/60 Hz

Power consumption	10 W
Dimensions (approx.) (w/h/d)	430 × 95 × 295 mm (17 × 3 3/4 × 11 5/8 in.) incl. projecting parts
Mass (approx.)	3.0 kg (6 lbs 10 oz)

Supplied accessories

Audio cord (2 phono plugs - 2 phono plugs) (1)
Remote commander (remote) RM-D420 (CDP-XE500) (1)
Sony SUM-3 (NS) batteries (CDP-XE500) (2)

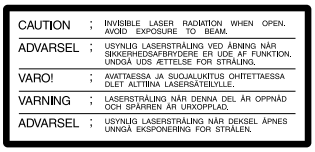
Design and specifications are subject to change without notice.

MICROFILM

COMPACT DISC PLAYER
SONY®

The laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

The following caution label is located inside of the unit.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÄD OCH SPÄRREN ÄR URKOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION

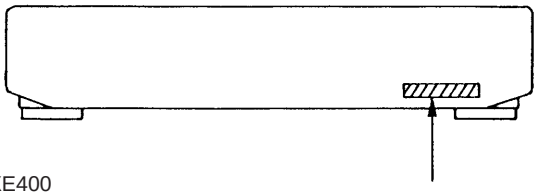
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

MODEL IDENTIFICATION

– Back Panel –



CDP-XE400	
US Model	: 4-977-587-5☐
CDP-XE500	
US Model	: 4-977-587-1☐
E Model	: 4-977-587-3☐
Australian Model	: 4-977-587-4☐
Chinese Model	: 4-977-587-9☐
AEP, German, East European Model	: 4-978-388-0☐
UK Model	: 4-978-388-1☐

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers).
Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

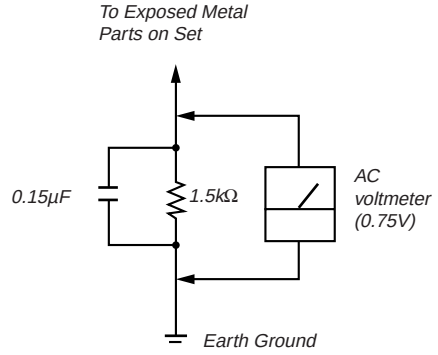


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

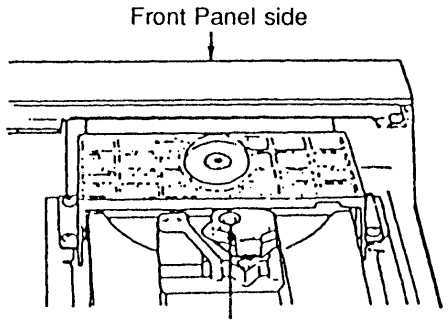
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



❶ Confirm that laser beam is spread.
❷ Up and down motion of the objective lens. (3 times)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

1. GENERAL
Identifying the Parts 4
Playing a CD 5

2. DISASSEMBLY
2-1. Front Panel 6
2-2. Base Unit Block 6

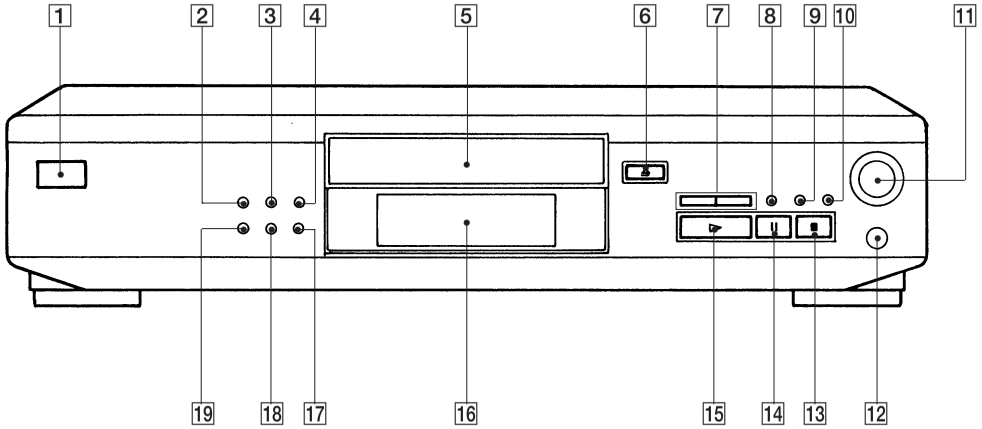
3. ELECTRICAL BLOCK CHECKING 7

4. DIAGRAMS
4-1. IC Pin Functions 9
4-2. Printed Wiring Board – BD Section – 13
4-3. Schematic Diagram – BD Section – 15
4-4. Printed Wiring Boards – Main Section – 17
4-5. Schematic Diagram – Main Section – 21

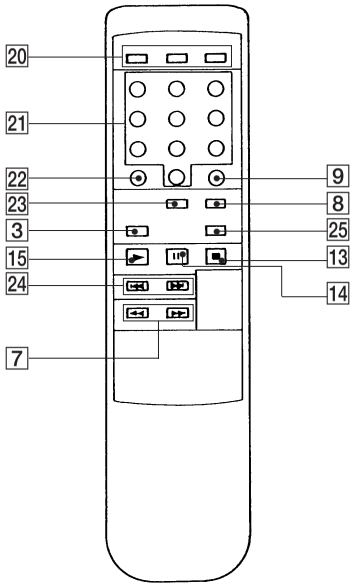
5. EXPLODED VIEWS
5-1. Case Section 28
5-2. Back Panel Section 29
5-3. CD Mechanism Section 30
5-4. Base Unit Section 31

6. ELECTRICAL PARTS LIST 32

IDENTIFYING THE PARTS



RM-D420 (CDP-XE500 only)

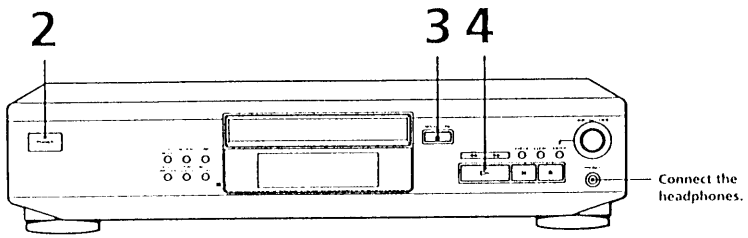


Front Panel/Remote Commander

1 POWER switch
2 PLAY MODE button
3 REPEAT button
4 TIME button
5 Disc tray
6 ⏏ OPEN/CLOSE button
7 ◀◀/▶▶ (manual search) button
8 CHECK (program check) button
9 CLEAR (program clear) button
10 ENTER button
11 ⏮ AMS ⏭ (AMS*) control
12 PHONES Jack
13 ■ (Stop) button
14 ❚❚ (Pause) button
15 ▷ (Play) button
16 Display
17 MUSIC SCAN button
18 PEAK SEARCH button
19 EDIT/TIME button
20 Play Mode buttons
CONTINUE button
SHUFFLE button
PROGRAM button
21 Numeric buttons
22 >10 (over 10) button
23 TIME button
24 ⏮/⏭ (AMS*) button
25 FADER button

*AMS is the abbreviation of Automatic Music Sensor.

Playing a CD



- See pages 4 – 5 for the hookup information.

If you turn on the player with a CD in the tray
You can start playing automatically from the beginning of the CD. If you connect a commercially available timer, you can start playing the CD at any time you want.

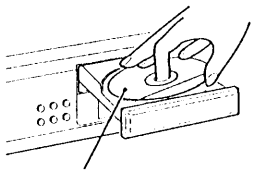
You can adjust the output level with the LINE OUT LEVEL +/– on the remote (CDP-XE500 only)

You can adjust the headphones volume on the remote (CDP-XE500 only)
Connect the headphones to the PHONES jack and adjust the volume with the LINE OUT LEVEL +/– on the remote.

1 Turn on the amplifier and select the CD player position so that you can listen to the sound from this player.

2 Press POWER to turn on the player.

3 Press ⏏ OPEN/CLOSE, and place a disc on the disc tray.


With the label side up

4 Press ▷.
The disc tray closes and the player plays all the tracks once (Continuous Play).
Adjust the volume on the amplifier.

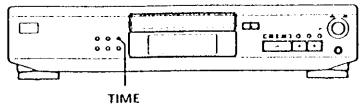
To stop playback

Press ■.

To	You need to
Pause	Press II
Resume play after pause	Press II or ▷
Go to the next track	Turn ⏮ AMS ⏭ clockwise
Go back to the preceding track	Turn ⏮ AMS ⏭ counterclockwise
Stop play and remove the CD	Press ⏏ OPEN/CLOSE

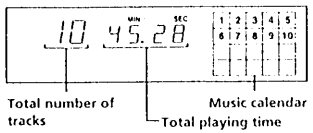
Using the Display

You can check information about the disc using the display.



Checking the total number and playing time of the tracks

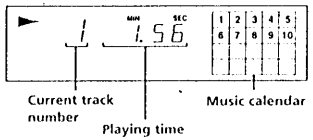
Press TIME before you start playing.
The display shows the total number of tracks, total playing time and music calendar.



While in Shuffle Play mode ("SHUFFLE" appears in the display; see page 9), a one-second access time blank is added between each track. This increase is automatically added to the total playing time in the display.
The information also appears when you press ⏏ OPEN/CLOSE to close the disc tray.

Display information while playing a disc

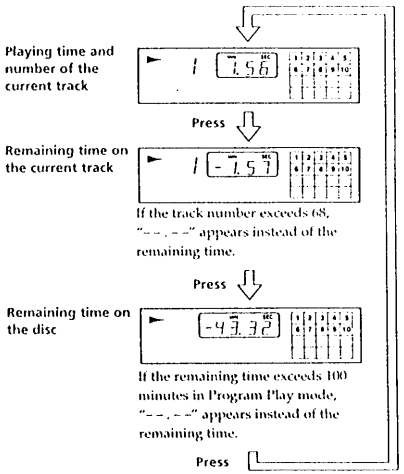
While playing a disc, the display shows the current track number, playing time and the music calendar.



The track numbers in the music calendar disappear after they are played.

Checking the remaining time

Each time you press TIME while playing a disc, the display changes as shown in the chart below.


Playing time and number of the current track
1
1.56
Press
Remaining time on the current track
1
-1.57
If the track number exceeds 68, "– –.– –" appears instead of the remaining time.
Press
Remaining time on the disc
-43.32
If the remaining time exceeds 100 minutes in Program Play mode, "– –.– –" appears instead of the remaining time.
Press

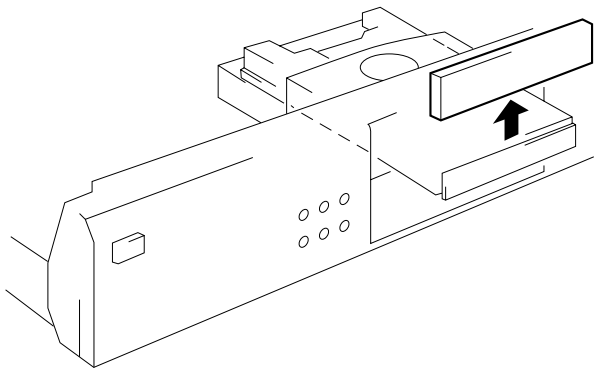
SECTION 2
DISASSEMBLY

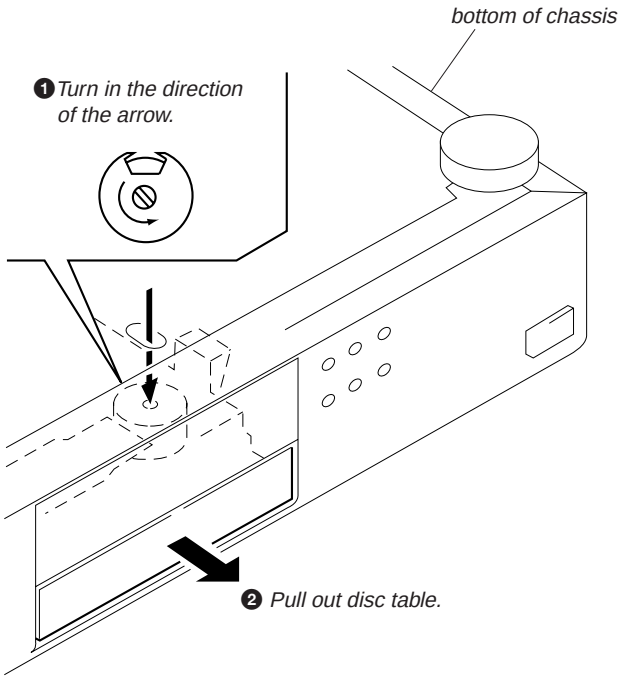
Note : Follow the disassembly procedure in the numerical order given.

2-1. FRONT PANEL

• When removing the front panel assembly on electric power failure, first open the loading block by turning cam with a screwdriver as shown in the figure, next pull out the loading block with hand, and remove the loading panel as shown in the figure, then remove the front panel assembly.

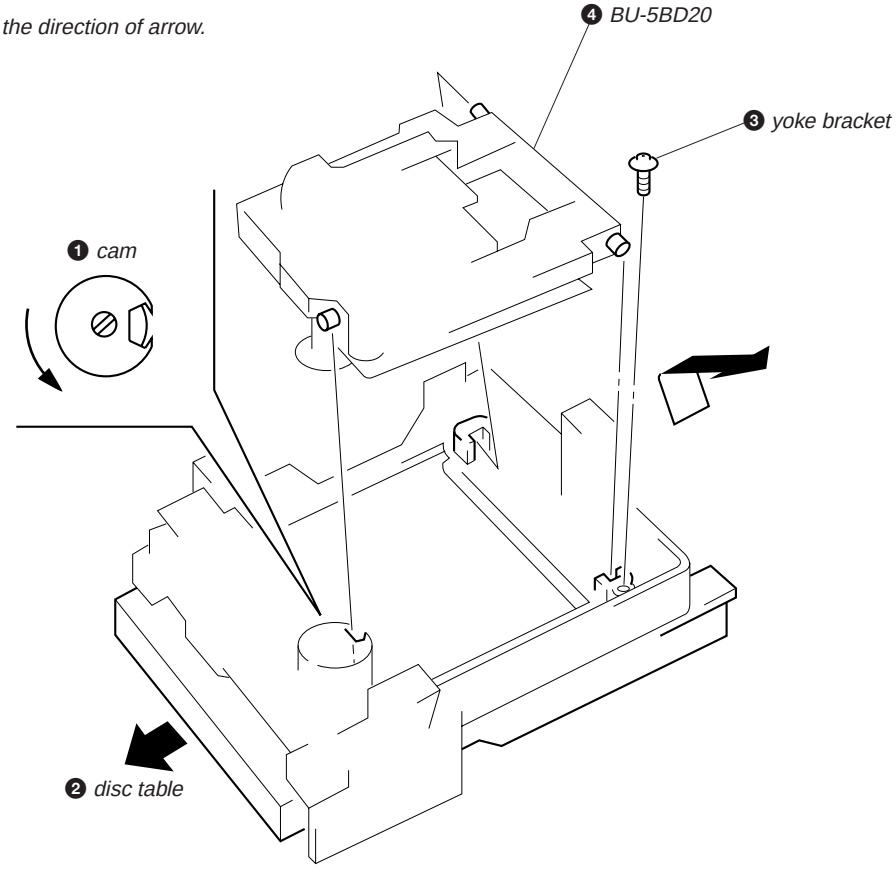
❸ *Remove loading panel in the arrow direction.*





2-2. BASE UNIT BLOCK

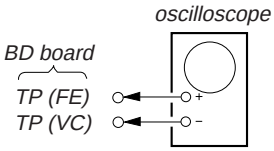
❶ *Turn the cam to direction of arrow (Counter clockwise) by minus screw driver.*
❷ *Take off the disc table.*
❸ *Remove the yoke bracket.*
❹ *Remove the MD (BU-5BD20) to the direction of arrow.*



SECTION 3
ELECTRICAL BLOCK CHECKING

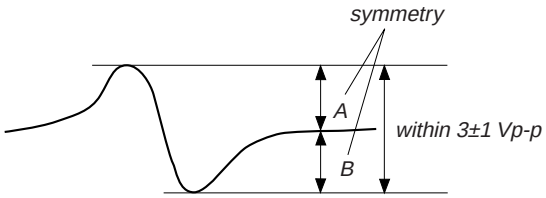
Note :
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the objective lens using an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turn Power switch on again and actuate the focus search. (Actuate the focus search when disc table is moving in and out.)
5. Check if the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1 Vp-p.

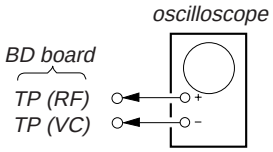
S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Set sweep time as long as possible and set the brightness to obtain best waveform.

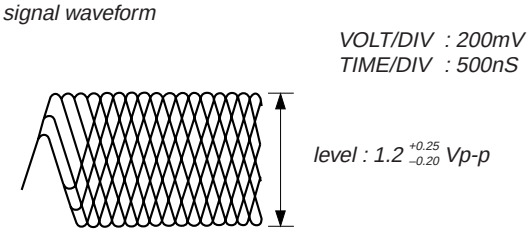
RF Level Check



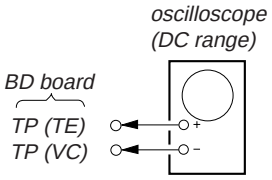
Procedure :
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check if RF signal level is correct or not.

Note :
A clear RF signal waveform means that the shape " ◇ " can be clearly distinguished at the center of the waveform.

RF signal waveform

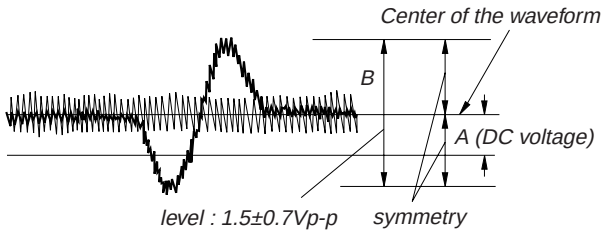


E-F Balance (1 Track Jump) Check



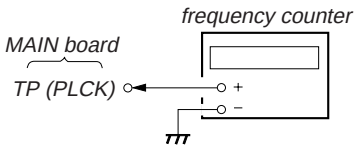
Procedure :
1. Connect oscilloscope to test point TP (TE) on BD board .
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the "▮▮ (pause)" button. (Becomes the 1 track jump mode.)
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the following :
A/B×100 = less than ± 20%.

1 track jump waveform



RF PLL Free-run Frequency Check

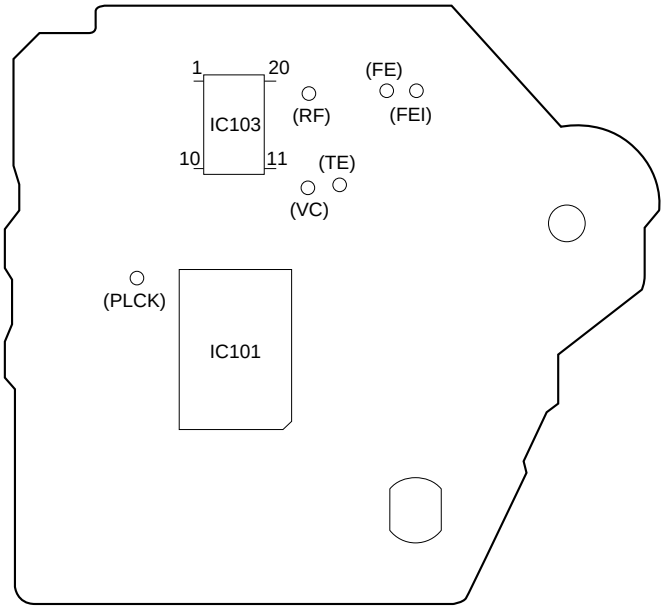
Procedure :
1. Connect frequency counter to test point (PLCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location : BD board

–BD board (conductor side) –



SECTION 4
DIAGRAMS

4-1. IC PIN FUNCTIONS

• IC101 CXD2545Q (DIGITAL SERVO & DIGITAL SIGNAL PROCESSOR)

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled drive output (Not used.)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (Not used.)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (Not used.)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (Not used.)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (Not used.)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (Not used.)
12	VCOO	O	VCO output for analog EFM PLL. (Not used.)
13	VCOI	I	VCO input for analog EFM PLL. (Ground)
14	TEST	I	TEST pin connected normally to Ground.
15	DVSS	—	Digital Ground
16	TES2	I	TEST pin connected normally to Ground.
17	TES3	I	TEST pin connected normally to Ground.
18	PDO	O	Charge-pump output for analog EFM PLL. (Not used.)
19	VPCO	O	Charge-pump output for variable pitch PLL. (Not used.)
20	VCKI	I	Clock input from variable pitch external VCO. (Ground)
21	AVD2	—	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers.
23	AVS2	—	Analog Ground
24	ADIO	I	(Not used.)
25	RFC	O	(Not used.)
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL.
32	FILI	I	Filter input for master PLL.
33	PCO	O	Charge-pump output for master PLL.
34	CLTV	I	Control voltage input for master VCO.
35	AVS1	—	Analog Ground
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry comparate voltage input
39	ASYO	O	EFM full swing output
40	AVD1	—	Analog power supply
41	DVDD	—	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input
44	WDCK	O	48-bit slot D/A interface. Word clock
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL=1. 48-bit slot serial data when PSSL=0.
47	BCLK	O	DA 15 output when PSSL=1. 48-bit slot data when PSSL=0.

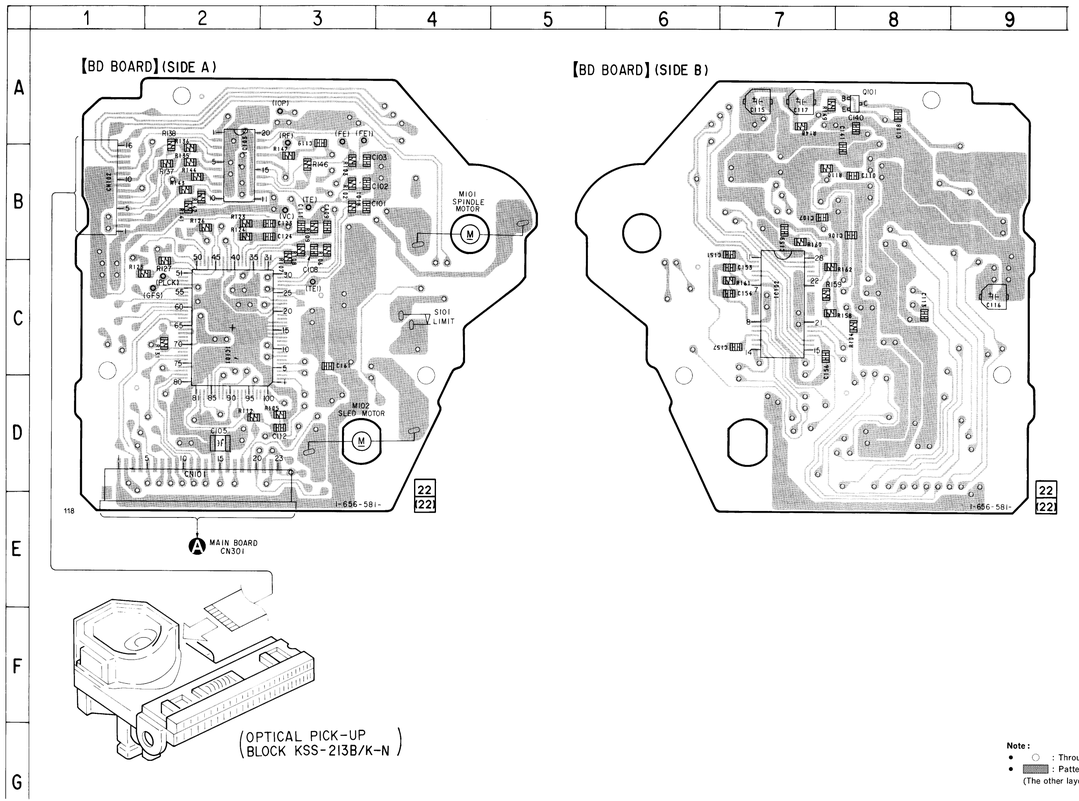
Pin No.	Pin Name	I/O	Function
48	64DATA	O	DA 14 output when PSSL=1. 64-bit slot data when PSSL=0. (Not used.)
49	64BCLK	O	DA 13 output when PSSL=1. 64-bit slot data when PSSL=0. (Not used.)
50	64LRCK	O	DA 12 output when PSSL=1. 64-bit slot data when PSSL=0. (Not used.)
51	GTOP	O	DA 11 output when PSSL=1. GTOP output when PSSL=0. (Not used.)
52	XUGF	O	DA 10 output when PSSL=1. XUGF output when PSSL=0. (Not used.)
53	XPLCK	O	DA 09 output when PSSL=1. XPLCK output when PSSL=0.
54	GFS	O	DA 08 output when PSSL=1. GFS output when PSSL=0.
55	PFCK	O	DA 07 output when PSSL=1. RFCK output when PSSL=0.
56	C2PO	O	DA 06 output when PSSL=1. C2PO output when PSSL=0. (Not used.)
57	XRAOF	O	DA 05 output when PSSL=1. XRAOF output when PSSL=0. (Not used.)
58	MNT3	O	DA 04 output when PSSL=1. MNT3 output when PSSL=0.
59	MNT2	O	DA 03 output when PSSL=1. MNT2 output when PSSL=0.
60	MNT1	O	DA 02 output when PSSL=1. MNT1 output when PSSL=0.
61	MNT0	O	DA 01 output when PSSL=1. MNT0 output when PSSL=0.
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output (Not used.)
64	XTSL	I	X'tal selection input pin (Ground)
65	DVSS	–	Digital Ground
66	FSTI	I	2/3 divider input of pins 62 and 63.
67	FSTO	O	2/3 divider output of pins 62 and 63.
68	FSOF	O	(Not used.)
69	C16M	O	16.9344MHz output (Not used.)
70	MD2	I	Digital-out ON/OFF control pin (+5V)
71	DOUT	O	Digital-out output pin
72	EMPH	O	Playback disc output in emphasis mode. (Not used.)
73	WFCK	O	WFCK output
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output (Not used.)
76	EXCK	I	Clock input for SBSO read-out. (Ground)
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQSO read-out.
79	MUTE	I	Muting selection pin
80	SENS	O	SENS output
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode (+5V)
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin (Ground)
85	ATSK	I	Input pin for anti-shock. (Ground)
86	DATA	I	Serial data input, supplied from CPU.
87	XLAT	I	Latch input, supplied from CPU.
88	CLOK	I	Serial data transfer clock input, supplied from CPU.
89	COUT	O	Numbers of track counted signal output. (Not used.)
90	DVDD	–	Digital power supply
91	MIRR	O	Mirror signal output
92	DFCT	O	Defect signal output
93	FOK	O	Focus OK output
94	FSW	O	Output to select spindle motor output filter. (Not used.)
95	MON	O	Output to control ON/OFF of spindle motor. (Not used.)
96	MDP	O	Output to control spindle motor servo

Pin No.	Pin Name	I/O	Function
97	MDS	O	Output to control spindle motor servo. (Not used.)
98	LOCK	O	GFS is sampled by 460Hz. H when GFS is H. (Not used.)
99	SSTP	I	Input signal to detect disc innermost track.
100	SFDR	O	Sled drive output

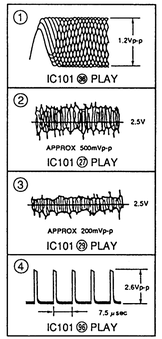
• IC501 CXP82612-021Q (MASTER CONTROL)

Pin No.	Pin Name	I/O	Function
1	TIMER	–	Connected to +5V.
2	RM	I	Audio bus input
3	+5V	–	Connected to +5V.
4-6	–	–	Not used. (Open)
7	PGML	O	Latch signal output to digital filter (IC201).
8	CLK	O	Serial clock output
9	SENSE	I	SENSE signal input
10	DATA	O	Serial data output
11	SQCK	O	Read out clock output for subcode Q data.
12	SUBQ	I	Subcode Q data input
13	–	–	Not used. (Open)
14	AMUTE	O	Analog muting control signal output
15	LDON	O	Optical pick-up laser diode control output
16	XLT	O	Serial data latch signal output
17	–	–	Not used. (Open)
18	RV+	–	Not used. (Open)
19	RV-	–	Not used. (Open)
20	LDOUT	O	Loading motor control signal output
21	LDIN	I	Loading motor control signal input
22	KEY0	I	Key input (S530)
23	KEY1	I	Key input (S520-S527)
24	KEY2	I	Key input (S501-S506)
25	KEY3	–	Connected to +5V.
26,27	KEY4,KEY5	I	Key input (S531)
28	ADJ/AFADJ	–	ADJ/AFJ test pin
29	IN/OUTSW	I	Loading IN/OUT switch input
30	RST	I	Reset signal input
31	EXTAL	I	Clock input (4MHz)
32	XTAL	O	Clock output (4MHz)
33	VSS	–	Ground
34-41	–	–	Not used. (Open)
42-62	S1-S21	O	FL segment output
63-70	1G-7G	O	FL grid output
71	VFDP(-30V)	–	-30V pin for FL display tube.
72	VDD(+5V)	–	+5V pin
73	+5V	–	+5V pin
74	SEL1	–	Connected to Ground.
75-77	–	–	Connected to Ground.
78	SCOR	I	Read out timing signal input for subcode Q data.
79,80	SEL2,SEL3	–	Connected to +5V.

4-2. PRINTED WIRING BOARD — BD SECTION —

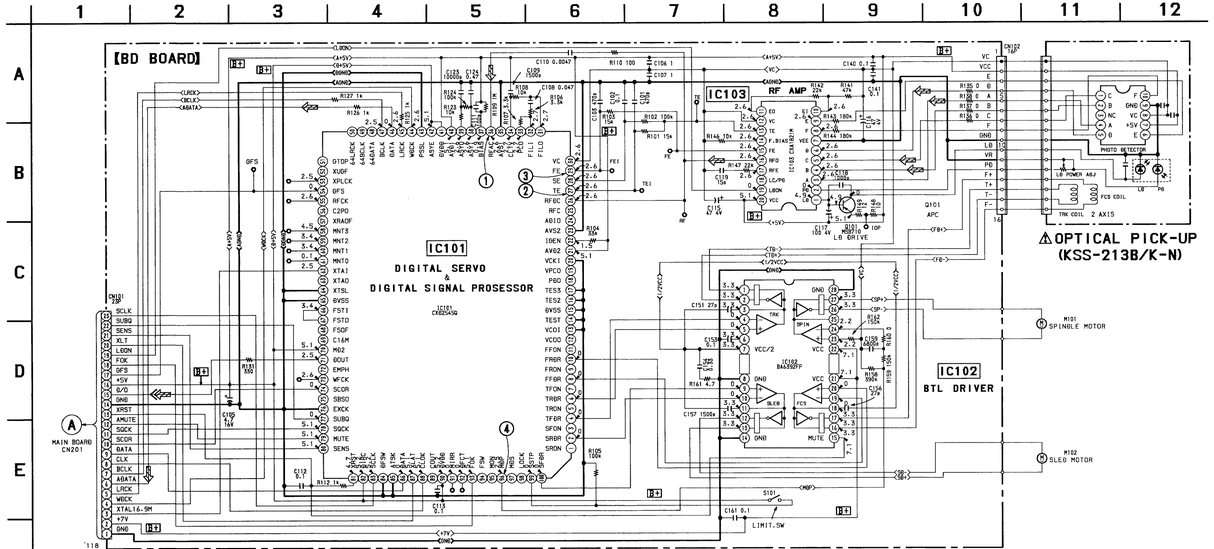


• Waveforms



Note :
- ○ : Through hole.
- ▭ : Pattern on the side which is seen.
(The other layer's patterns are not indicated.)

4-3. SCHEMATIC DIAGRAM — BD SECTION — • Refer to page 26 for IC Block Diagrams.



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark: STOP
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
⇨ : CD
⇨ : digital out

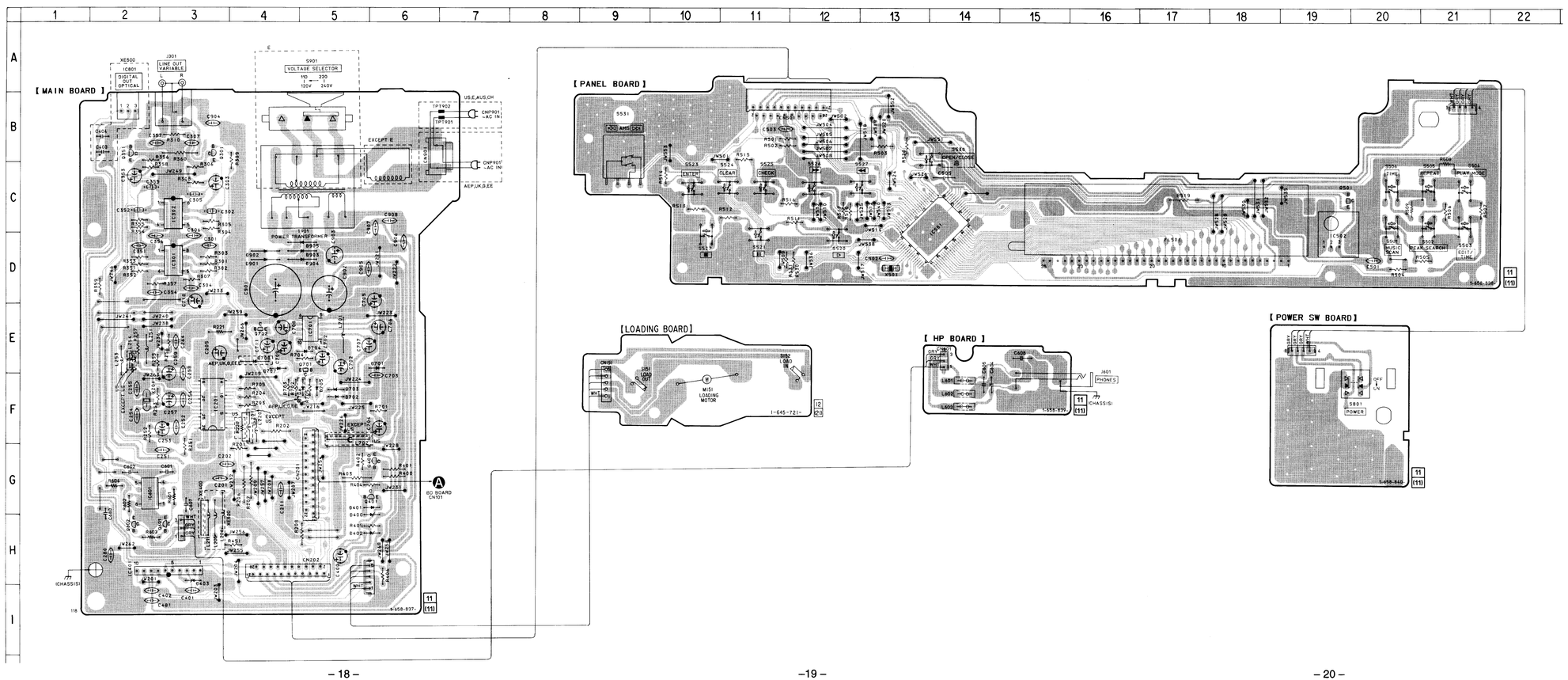
4-4. PRINTED WIRING BOARDS — MAIN SECTION —

• Semiconductor Location

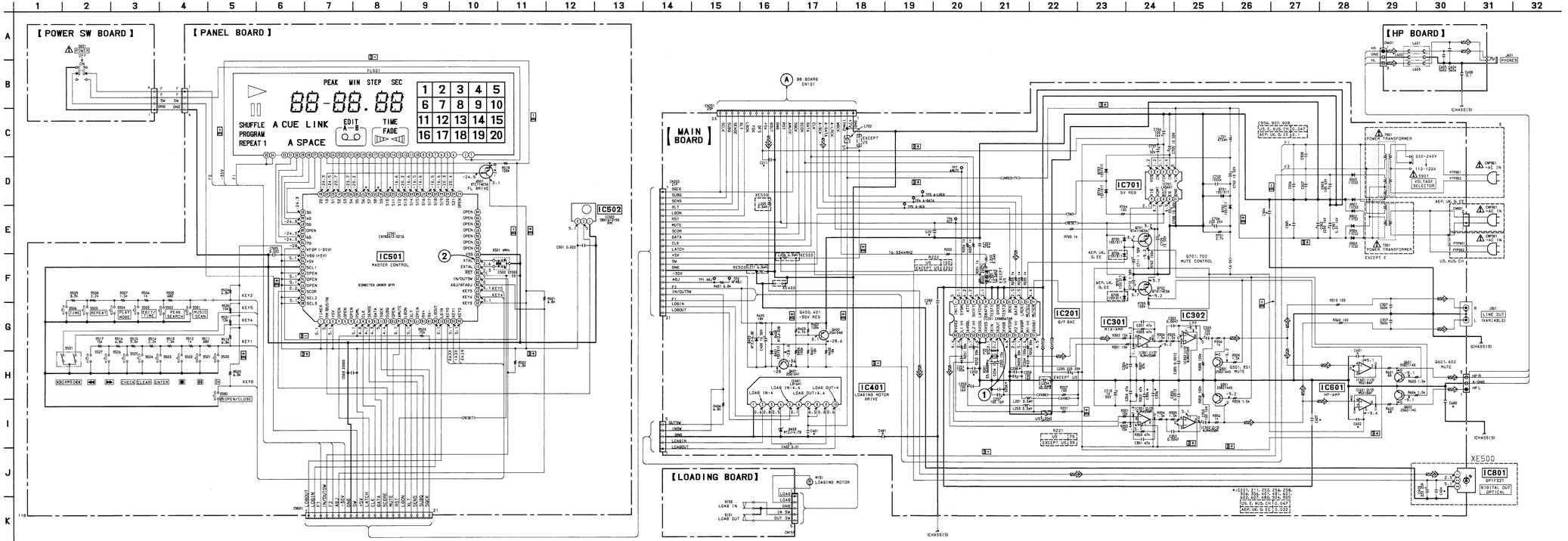
Ref. No.	Location
D400	G-5
D401	G-5
D402	H-5
D403	H-3
D701	E-6
D702	F-5
D703	F-5
D704	E-5
D705	F-5
D706	F-4
D707	E-4
D708	E-4
D901	D-4
D902	D-4
D903	D-5
D904	D-5
D905	D-5
IC201	F-3
IC301	D-3
IC302	C-3
IC401	H-3
IC501	C-14
IC502	C-19
IC601	G-2
IC701	E-5
IC801	B-2
Q301	B-3
Q351	B-2
Q400	G-6
Q401	G-5
Q501	C-19
Q601	H-3
Q602	H-2
Q701	E-5
Q702	E-4

Note :

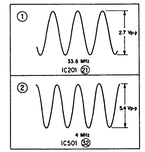
- ○— : parts extracted from the component side.
- ▭ : Pattern on the side which is seen.
- Abbreviation
  - G : German model
  - EE : East European model
  - AUS : Australian model
  - CH : Chinese model



4-5. SCHEMATIC DIAGRAM — MAIN SECTION — • Refer to page 26 for IC Block Diagrams.



• Waveforms



Note :

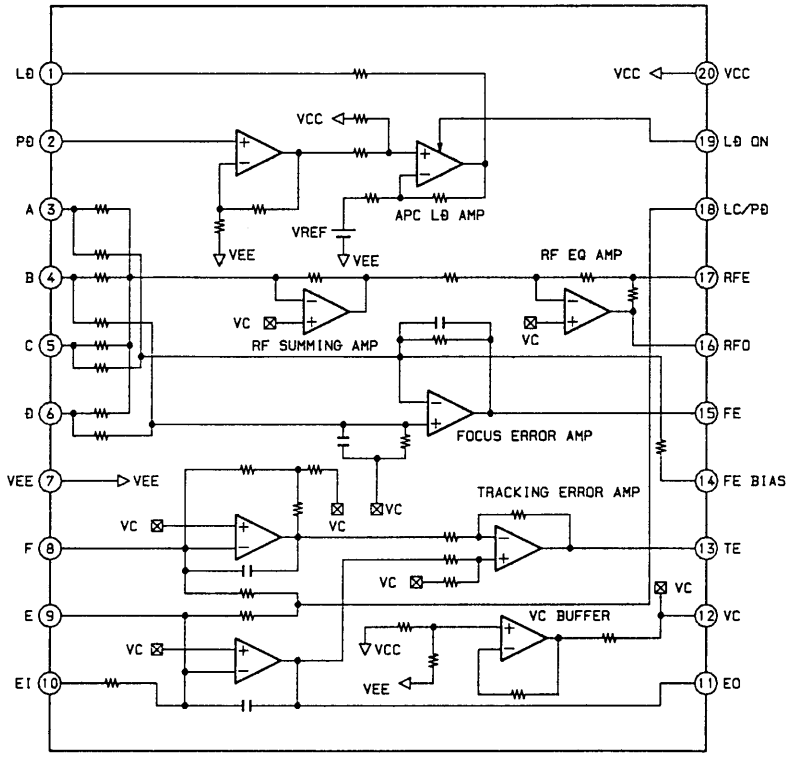
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.

Note : The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

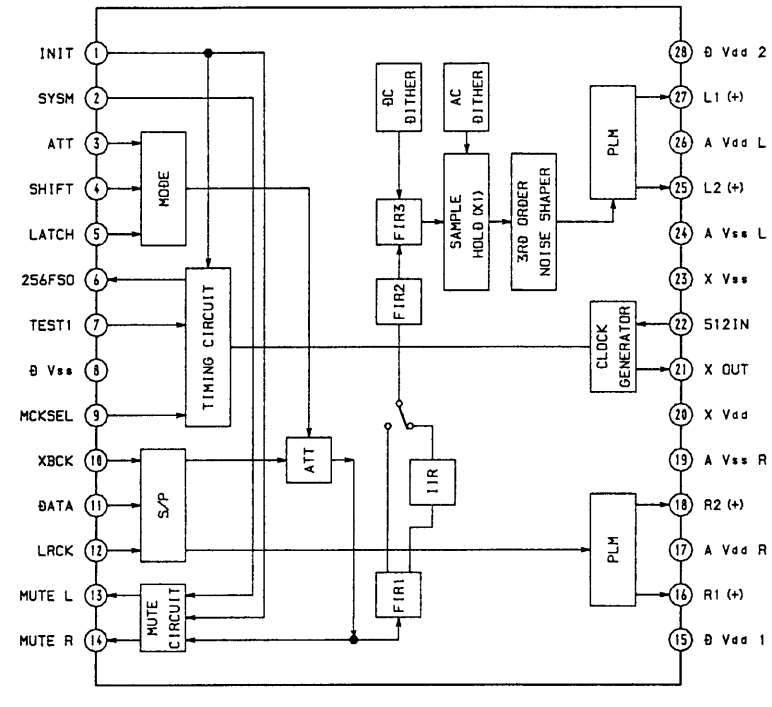
- B+ Line
- B− Line
- Voltage and waveforms are dc with respect to ground under no-signal PLAY conditions.
- no mark: PLAY
  * : Impossible to measure
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇨ : digital out
- Abbreviation
  G : German model
  EE : East European model
  AUS : Australian model
  CH : Chinese model

• IC Block Diagrams

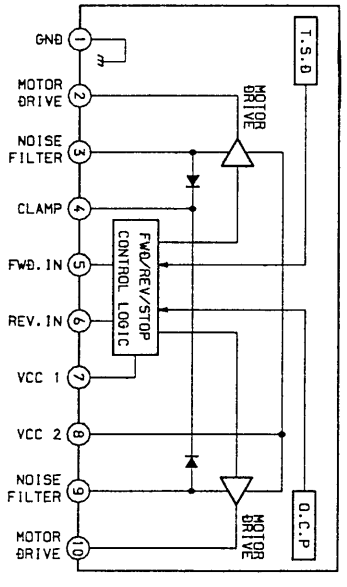
IC103 CXA1821M



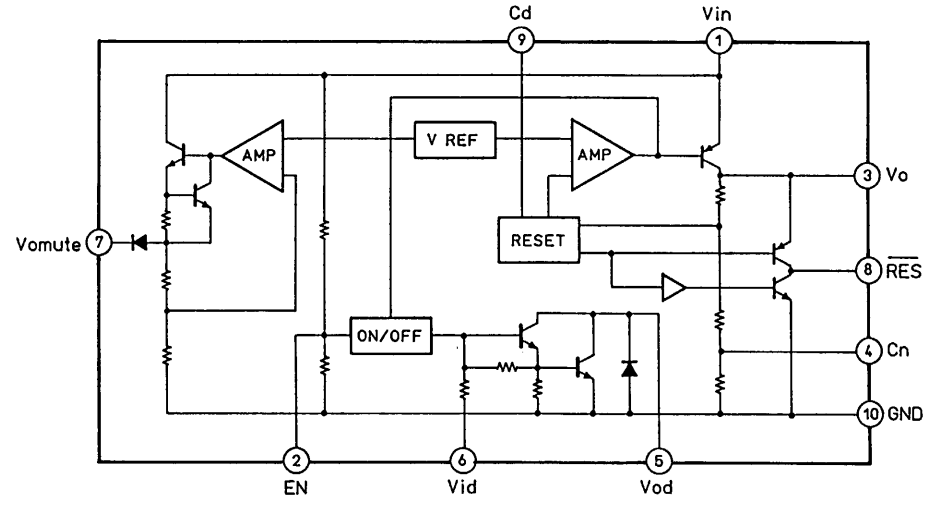
IC201 CXD8567AM



IC401 LB1641



IC701 LA5601



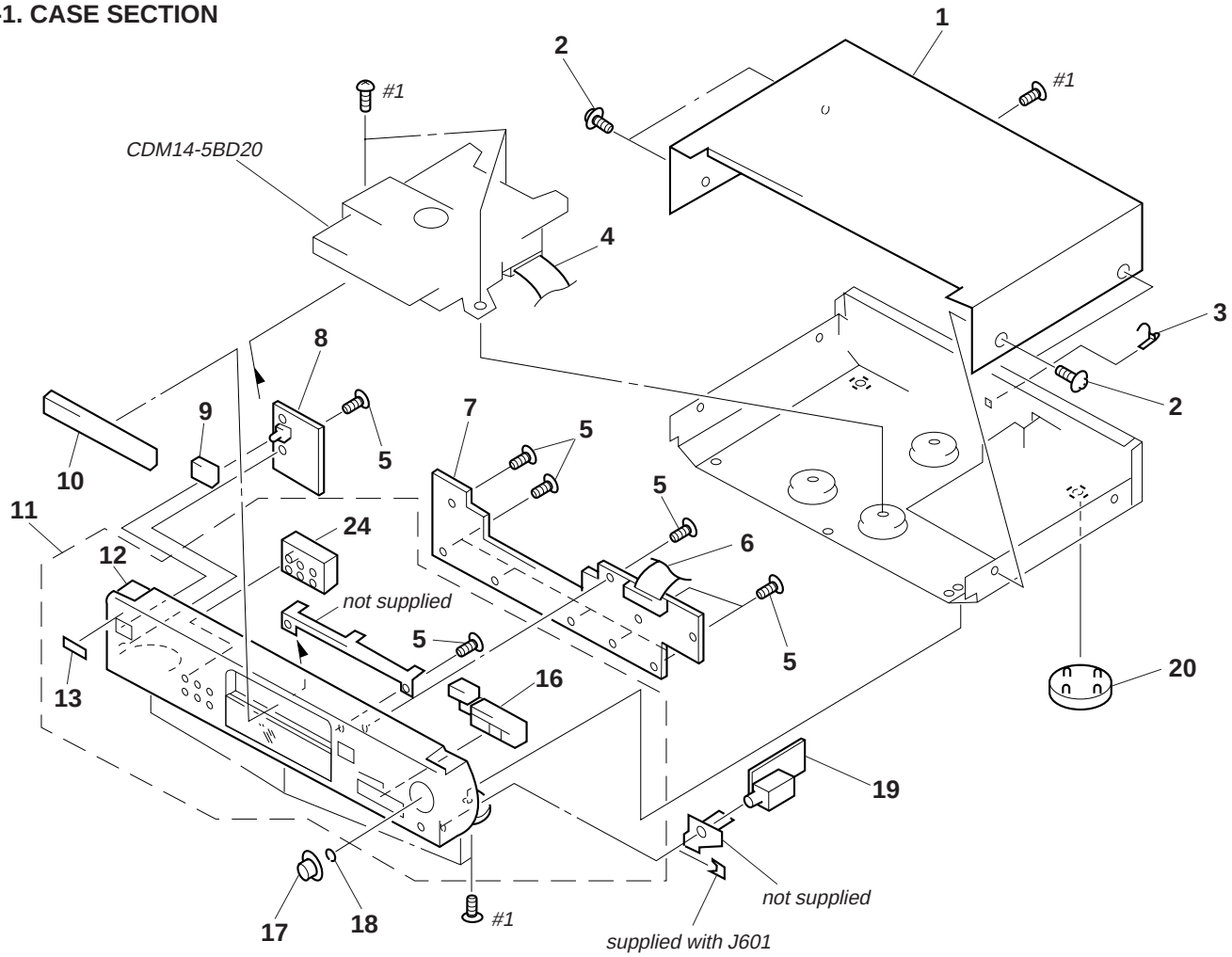
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  AUS : Australian model
  CH : Chinese model
  G : German model
  EE : East European model
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

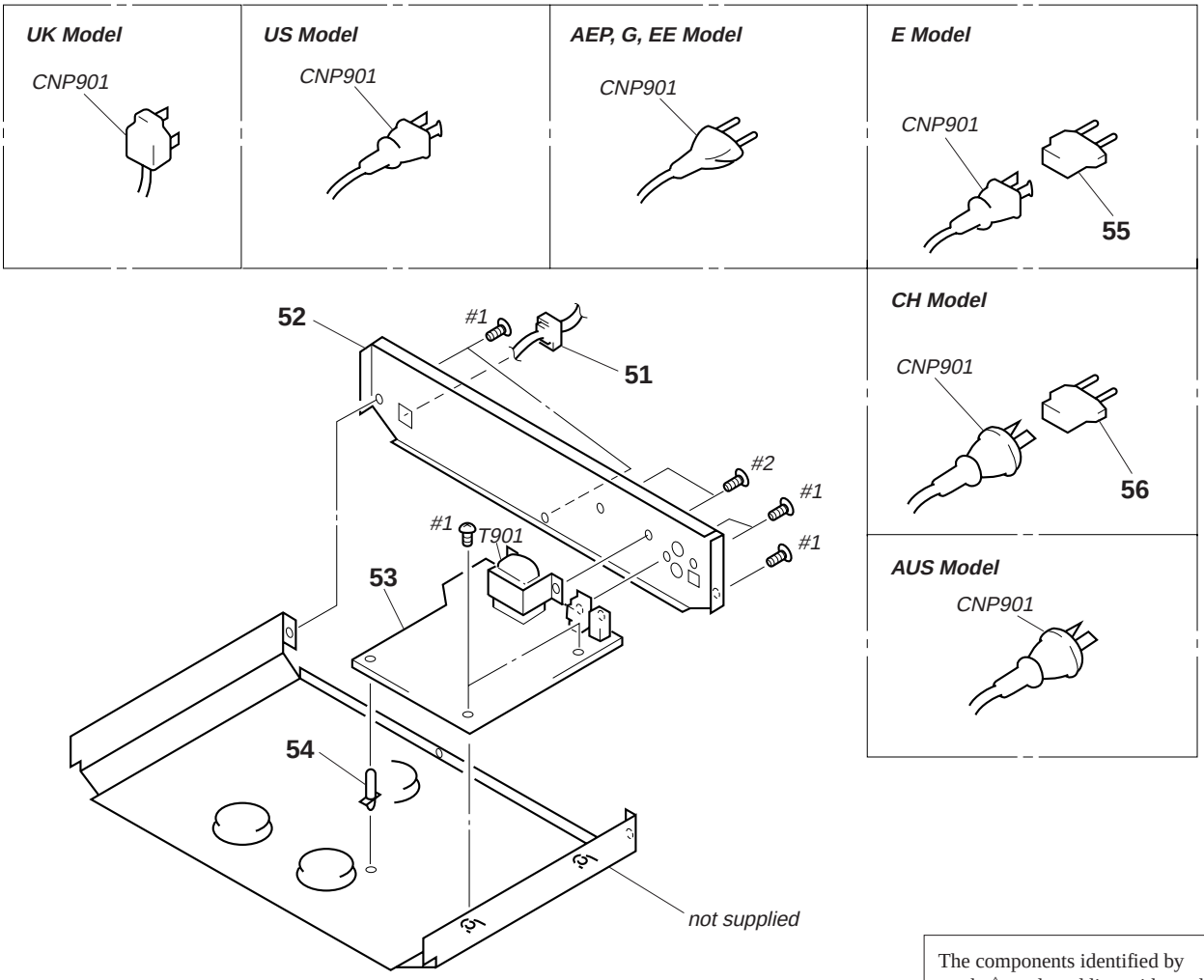
The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

5-1. CASE SECTION



Ref. No.	Part No.	Description	Remark
* 1	4-978-901-21	CASE (408226) (BLACK)	
* 1	4-978-901-91	CASE (408226) (SILVER)	
2	3-363-099-01	SCREW (CASE 3 TP2) (AEP,UK,G,EE)	
2	3-704-366-31	SCREW (CASE) (M3X6) (US,E,AUS,CH)	
3	4-956-370-02	BAND, PLUG FIXED (UK,AUS)	
4	1-776-100-11	WIRE (FLAT TYPE) (23 CORE)	
5	4-951-620-01	SCREW (2.6X8), +BVTP	
6	1-776-099-11	WIRE (FLAT TYPE) (21 CORE)	
* 7	A-4673-727-A	PANEL BOARD, COMPLETE	
* 8	1-658-840-11	POWER SW BOARD	
9	4-977-589-01	BUTTON (POWER) (BLACK)	
9	4-977-589-11	BUTTON (POWER) (SILVER)	
10	4-977-588-01	PANEL, LOADING (XE500:BLACK)	
10	4-977-588-11	PANEL, LOADING (XE400)	
10	4-977-588-41	PANEL, LOADING (XE500:SILVER)	
11	X-4946-531-1	PANEL ASSY, FRONT (AEP:BLACK,UK,G,EE)	
11	X-4946-957-1	PANEL ASSY, FRONT (SILVER)	
12	X-4947-021-1	PANEL ASSY, FRONT (XE500:E, AUS, CH)	
12	X-4947-022-1	PANEL ASSY, FRONT (XE500:US)	
12	X-4947-083-1	PANEL ASSY, FRONT (XE400)	
13	4-963-404-21	EMBLEM (5-A), SONY (US,E,AUS,CH)	
16	4-977-583-01	BUTTON (PLAY) (BLACK)	
17	4-977-590-01	KNOB (AMS) (US,E,AUS,CH)	
17	4-977-590-11	KNOB (AMS) (SILVER)	
18	3-354-981-01	SPRING (SUS), RING	
* 19	1-658-839-11	H.P BOARD	
20	X-4947-207-1	FOOT ASSY (F50150S) (BLACK)	
20	X-4947-124-1	FOOT ASSY (F50150S) (SILVER)	
24	4-977-584-11	BUTTON (MODE)	

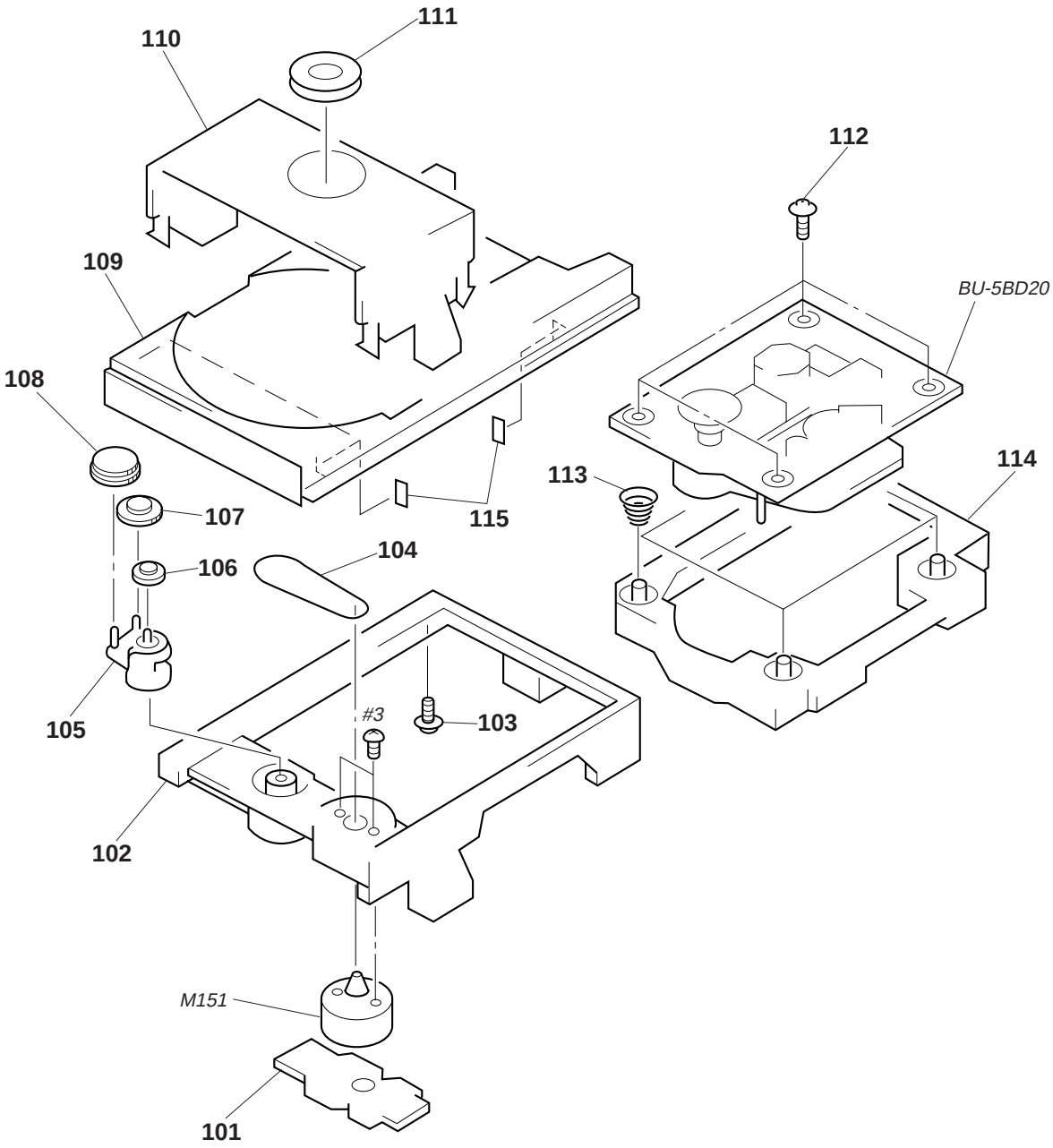
5-2. BACK PANEL SECTION



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

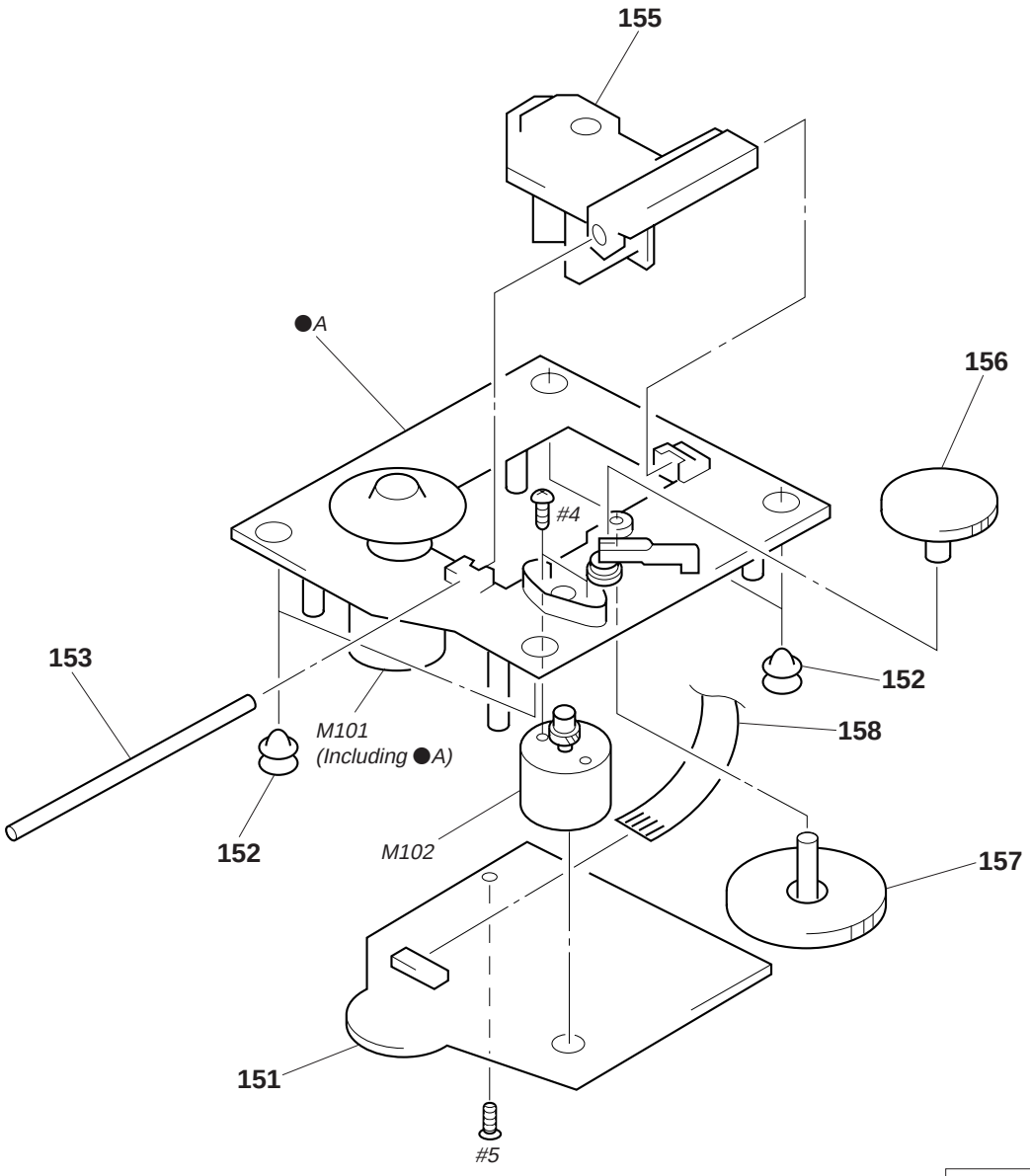
Ref. No.	Part No.	Description	Remark
51	3-703-244-00	BUSHING, CORD (EXCEPT US,E)	
* 51	3-703-571-11	BUSHING (S) (4516), CORD (US,E)	
* 52	4-977-587-11	PANEL, BACK (XE500:US)	
* 52	4-977-587-31	PANEL, BACK (E)	
* 52	4-977-587-41	PANEL, BACK (AUS)	
* 52	4-977-587-51	PANEL, BACK (XE400)	
* 52	4-977-587-91	PANEL, BACK (CH)	
* 52	4-978-388-01	PANEL, BACK (AEP,G,EE)	
* 52	4-978-388-11	PANEL, BACK (UK)	
* 53	A-4673-738-A	MAIN BOARD, COMPLETE (XE400)	
* 53	A-4673-739-A	MAIN BOARD, COMPLETE (E)	
53	A-4673-740-A	MAIN BOARD, COMPLETE (EXCEPT US,E)	
53	A-4673-753-A	MAIN BOARD, COMPLETE (XE500:US)	
* 54	4-954-051-51	HOLDER, PC BOARD	
⚠ 55	1-569-007-11	ADAPTOR, CONVERSION 2P (E)	
⚠ 56	1-569-008-11	ADAPTOR, CONVERSION 2P (CH)	
⚠ CNP901	1-558-943-81	CORD, POWER (E)	
⚠ CNP901	1-558-945-21	CORD, POWER (POLAR.SPT-1) (US)	
⚠ CNP901	1-575-651-21	CORD, POWER (AEP,G,EE)	
⚠ CNP901	1-696-845-11	CORD, POWER (AUS)	
⚠ CNP901	1-696-907-11	CORD, POWER (UK)	
⚠ CNP901	1-696-966-11	CORD, POWER (CH)	
⚠ T901	1-423-979-11	TRANSFORMER, POWER (EXCEPT US,E)	
⚠ T901	1-426-621-11	TRANSFORMER, POWER (US)	
⚠ T901	1-426-622-11	TRANSFORMER, POWER (E)	

5-3. CD MECHANISM SECTION
(CDM14-5BD20)



Ref. No.	Part No.	Description	Remark
* 101	1-645-721-11	LOADING BOARD	
102	4-933-111-11	CHASSIS (MD) (AEP,UK,G,EE)	
102	4-933-111-41	CHASSIS (MD) (US,E,AUS,CH)	
* 103	4-917-583-21	BRACKET, YOKE	
104	4-927-649-01	BELT	
105	4-933-109-01	CAM	
106	4-927-651-01	PULLEY (S)	
107	4-967-268-01	GEAR (C)	
108	4-933-107-01	GEAR (PL)	
109	4-933-112-11	TABLE, DISC	
110	4-933-110-41	HOLDER (MG)	
* 111	1-452-538-11	MAGNET	
112	4-933-134-01	SCREW (+PTPWH M2.6X6)	
113	4-959-996-01	SPRING (932), COMPRESSION	
114	4-933-129-01	HOLDER (BU)	
115	4-925-315-31	DAMPER	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

5-4. BASE UNIT SECTION (BU-5BD20)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
151	A-4673-509-A	BD BOARD, COMPLETE (US,E,AUS,CH)	
* 151	A-4673-511-A	BD BOARD, COMPLETE (AEP,UK,G,EE)	
152	4-951-940-01	INSULATOR (BU)	
153	4-917-565-01	SHAFT, SLED	
⚠ 155	8-848-367-11	PICK-UP BLOCK, OPTICAL KSS-213B/K-N	
156	4-917-567-21	GEAR (M)	
157	4-917-564-01	GEAR (P), FLATNESS	
158	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
M101	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	

BD

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

- Abbreviation
  AUS : Australian model
  CH : Chinese model
  G : German model
  EE : East European model

Ref. No.	Part No.	Description			Remark
	A-4673-509-A	BD BOARD, COMPLETE (US,E,AUS,CH)			
*	A-4673-511-A	BD BOARD, COMPLETE (AEP,UK,G,EE)			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT	100uF	20%	4V
C118	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C119	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C140	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C151	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C153	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C154	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C156	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C157	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-770-072-11	CONNECTOR, FFC 23P			
CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC101	8-752-369-78	IC	CXD2545Q		
IC102	8-759-176-09	IC	BA6392FP		
IC103	8-752-072-45	IC	CXA1821M-T6		

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R110	1-216-025-00	METAL GLAZE	100	5%	1/10W
R112	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R125-127					
	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R135-138					
	1-216-295-00	CONDUCTOR, CHIP		(2012)	
R141	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R142	1-216-081-00	METAL CHIP	22K	5%	1/10W
R143	1-216-103-00	METAL GLAZE	180K	5%	1/10W
R144	1-216-103-00	METAL GLAZE	180K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	METAL GLAZE	12	5%	1/10W
R158	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R160	1-216-295-00	CONDUCTOR, CHIP		(2012)	
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)			
**********					

Ref. No.	Part No.	Description			Remark
*	1-658-839-11	H.P BOARD			
		*********			
		< CAPACITOR >			
C604	1-162-291-31	CERAMIC	560PF	10%	50V
C605	1-162-291-31	CERAMIC	560PF	10%	50V
C608	1-164-159-21	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN601	1-568-941-11	PIN, CONNECTOR 3P			
		< JACK >			
J601	1-568-519-41	JACK, LARGE TYPE (PHONES)			
		< COIL >			
L601-603					
	1-410-397-21	FERRITE BEAD INDUCTOR 1.1uH			
**********					
*	1-645-721-11	LOADING BOARD			
		**********			
		< CONNECTOR >			
* CN151	1-568-943-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)			
**********					
*	A-4673-738-A	MAIN BOARD, COMPLETE (XE400)			
*	A-4673-739-A	MAIN BOARD, COMPLETE (E)			
*	A-4673-740-A	MAIN BOARD, COMPLETE (EXCEPT US,E)			
*	A-4673-753-A	MAIN BOARD, COMPLETE (XE500:US)			
		**********			
		< CAPACITOR >			
C201	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C201	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C202	1-162-290-31	CERAMIC	470PF	10%	50V
C205	1-104-666-11	ELECT	220uF	20%	25V
C211	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C211	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C251	1-162-282-31	CERAMIC	100PF	10%	50V
C252	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C252	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C253	1-126-933-11	ELECT	100uF	20%	16V
C254	1-162-199-31	CERAMIC	10PF	5%	50V
C255	1-162-199-31	CERAMIC	10PF	5%	50V
C256	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C256	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C257	1-126-933-11	ELECT	100uF	20%	16V
C258	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C258	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C259	1-126-933-11	ELECT	100uF	20%	16V
C264	1-162-282-31	CERAMIC	100PF	10%	50V
C280	1-164-159-21	CERAMIC	0.1uF		50V
C301	1-162-215-31	CERAMIC	47PF	5%	50V
C302	1-130-479-00	MYLAR	0.0047uF	5%	50V
C303	1-126-933-11	ELECT	100uF	20%	16V
C304	1-162-215-31	CERAMIC	47PF	5%	50V
C305	1-130-472-00	MYLAR	0.0012uF	5%	50V
C306	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C306	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C307	1-162-291-31	CERAMIC	560PF	10%	50V
C351	1-162-215-31	CERAMIC	47PF	5%	50V
C352	1-130-479-00	MYLAR	0.0047uF	5%	50V
C353	1-126-933-11	ELECT	100uF	20%	16V
C354	1-162-215-31	CERAMIC	47PF	5%	50V
C355	1-130-472-00	MYLAR	0.0012uF	5%	50V
C356	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C356	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C357	1-162-291-31	CERAMIC	560PF	10%	50V
C400	1-126-964-11	ELECT	10uF	20%	50V
C401	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C401	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C402	1-162-306-11	CERAMIC	0.01uF	30%	16V
C403	1-104-666-11	ELECT	220uF	20%	25V (XE500)
C404	1-101-006-00	CERAMIC	0.047uF		50V (XE500:US,E,AUS,CH)
C404	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C481	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C481	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C601	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C601	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)

MAIN

Ref. No.	Part No.	Description			Remark
C602	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C602	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C607	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C607	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C680	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C680	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C702	1-126-964-11	ELECT	10uF	20%	50V
C703	1-162-294-31	CERAMIC	0.001uF	10%	50V
C704	1-104-666-11	ELECT	220uF	20%	25V
C705	1-126-964-11	ELECT	10uF	20%	50V
C706	1-126-933-11	ELECT	100uF	20%	16V
C707	1-124-903-11	ELECT	1uF	20%	50V
C708-710					
	1-126-964-11	ELECT	10uF	20%	50V
C711	1-124-903-11	ELECT	1uF	20%	50V
C712	1-124-903-11	ELECT	1uF	20%	50V
C901	1-126-939-11	ELECT	10000uF	20%	16V
C902	1-126-768-11	ELECT	2200uF	20%	16V
C903	1-128-576-11	ELECT	100uF	20%	63V
C904	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C904	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C905	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C905	1-161-494-00	CERAMIC	0.022uF		25V (AEP,UK,G,EE)
C906	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C906	1-164-159-21	CERAMIC	0.1uF		50V (AEP,UK,G,EE)
C907	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C907	1-164-159-21	CERAMIC	0.1uF		50V (AEP,UK,G,EE)
C908	1-101-006-00	CERAMIC	0.047uF		50V (US,E,AUS,CH)
C908	1-164-159-21	CERAMIC	0.1uF		50V (AEP,UK,G,EE)
		< CONNECTOR >			
* CN201	1-568-839-11	SOCKET, CONNECTOR 23P			
CN202	1-568-838-11	SOCKET, CONNECTOR 21P			
CN901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P (AEP,UK,G,EE)			
		< DIODE >			
D400	8-719-982-22	DIODE	MTZJ-30D		
D401	8-719-815-85	DIODE	1S1585		
D402	8-719-109-97	DIODE	RD6.8ES-B2		
D403	8-719-010-34	DIODE	UZ-4.7BSC		
D701	8-719-815-85	DIODE	1S1585		
D702	8-719-815-85	DIODE	1S1585		
D703	8-719-815-85	DIODE	1S1585		
D704	8-719-815-85	DIODE	1S1585		
D705	8-719-815-85	DIODE	1S1585		
D706	8-719-815-85	DIODE	1S1585 (AEP,UK,G,EE)		
D707	8-719-815-85	DIODE	1S1585		
D708	8-719-815-85	DIODE	1S1585 (AEP,UK,G,EE)		
D901	8-719-200-82	DIODE	11ES2		
D902	8-719-200-82	DIODE	11ES2		
D903	8-719-200-82	DIODE	11ES2		
D904	8-719-200-82	DIODE	11ES2		
D905	8-719-200-82	DIODE	11ES2		
		< IC >			
IC201	8-759-362-47	IC	CXD8567AM		
IC301	8-759-634-51	IC	M5218AP		
IC302	8-759-634-51	IC	M5218AP		
IC401	8-759-822-09	IC	LB1641		
IC601	8-759-634-51	IC	M5218AP		
IC701	8-759-821-93	IC	LA5601		
IC801	8-749-921-12	IC	GP1F32T (DIGITAL OUT OPTICAL) (XE500)		
		< JACK >			
J301	1-770-719-11	JACK, PIN 2P (LINE OUT VARIABLE)			
		< COIL >			
L201	1-410-322-11	INDUCTOR	3.3uH (EXCEPT US)		
L205	1-410-322-11	INDUCTOR	3.3uH (XE500)		
L206	1-410-507-11	INDUCTOR	6.8uH (XE500)		
L211	1-410-507-11	INDUCTOR	6.8uH (XE500)		
L220	1-410-322-11	INDUCTOR	3.3uH		
L251	1-410-322-11	INDUCTOR	3.3uH		
L253	1-410-322-11	INDUCTOR	3.3uH		
L254	1-410-397-21	FERRITE BEAD INDUCTOR 1.1uH (US)			
L254	1-410-507-11	INDUCTOR	6.8uH (EXCEPT US)		
L701	1-414-223-11	INDUCTOR	470uH		
L702	1-412-473-21	INDUCTOR	0uH (US)		
		< TRANSISTOR >			
Q301	8-729-922-37	TRANSISTOR	2SD2144S		
Q351	8-729-922-37	TRANSISTOR	2SD2144S		
Q400	8-729-230-46	TRANSISTOR	2SA1048TP-YG		
Q401	8-729-019-64	TRANSISTOR	2SB1041		
Q601	8-729-922-37	TRANSISTOR	2SD2144S		
Q602	8-729-922-37	TRANSISTOR	2SD2144S		
Q701	8-729-029-56	TRANSISTOR	DTA144ESA-TP		
Q702	8-729-029-56	TRANSISTOR	DTA144ESA-TP		

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R201	1-249-417-11	CARBON	1K	5%	1/4W	
R202	1-247-807-11	CARBON	100	5%	1/4W	(US)
R202	1-247-815-00	CARBON	220	5%	1/4W	(EXCEPT US)
R203-208						
	1-249-417-11	CARBON	1K	5%	1/4W	
R220	1-247-815-00	CARBON	220	5%	1/4W	(US)
R221	1-247-804-11	CARBON	75	5%	1/4W	(US)
R221	1-249-400-11	CARBON	39	5%	1/4W	(EXCEPT US)
R251	1-249-436-11	CARBON	39K	5%	1/4W	
R252	1-249-436-11	CARBON	39K	5%	1/4W	
R253						
	1-249-424-11	CARBON	3.9K	5%	1/4W	
R255	1-249-436-11	CARBON	39K	5%	1/4W	
R256	1-249-436-11	CARBON	39K	5%	1/4W	
R257	1-247-807-11	CARBON	100	5%	1/4W	
R301	1-249-431-11	CARBON	15K	5%	1/4W	
R302	1-249-431-11	CARBON	15K	5%	1/4W	
R303	1-249-437-11	CARBON	47K	5%	1/4W	
R304	1-249-419-11	CARBON	1.5K	5%	1/4W	
R305	1-249-419-11	CARBON	1.5K	5%	1/4W	
R306	1-249-417-11	CARBON	1K	5%	1/4W	
R307	1-249-437-11	CARBON	47K	5%	1/4W	
R308	1-249-441-11	CARBON	100K	5%	1/4W	
R309	1-249-419-11	CARBON	1.5K	5%	1/4W	
R310	1-247-807-11	CARBON	100	5%	1/4W	
R351	1-249-431-11	CARBON	15K	5%	1/4W	
R352	1-249-431-11	CARBON	15K	5%	1/4W	
R353	1-249-437-11	CARBON	47K	5%	1/4W	
R354	1-249-419-11	CARBON	1.5K	5%	1/4W	
R355	1-249-419-11	CARBON	1.5K	5%	1/4W	
R356	1-249-417-11	CARBON	1K	5%	1/4W	
R357	1-249-437-11	CARBON	47K	5%	1/4W	
R358	1-249-441-11	CARBON	100K	5%	1/4W	
R359	1-249-419-11	CARBON	1.5K	5%	1/4W	
R360	1-247-807-11	CARBON	100	5%	1/4W	
R400	1-249-432-11	CARBON	18K	5%	1/4W	
R401	1-249-432-11	CARBON	18K	5%	1/4W	
R402	1-249-441-11	CARBON	100K	5%	1/4W	
R403	1-249-425-11	CARBON	4.7K	5%	1/4W	
R404	1-249-441-11	CARBON	100K	5%	1/4W	
R405	1-249-432-11	CARBON	18K	5%	1/4W	
R406	1-249-427-11	CARBON	6.8K	5%	1/4W	
R451	1-249-427-11	CARBON	6.8K	5%	1/4W	
R601	1-249-403-11	CARBON	68	5%	1/4W	
R602	1-249-403-11	CARBON	68	5%	1/4W	
R603	1-249-419-11	CARBON	1.5K	5%	1/4W	
R604	1-249-419-11	CARBON	1.5K	5%	1/4W	
R701	1-249-422-11	CARBON	2.7K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R702	1-249-441-11	CARBON	100K	5%	1/4W	
R703	1-249-441-11	CARBON	100K	5%	1/4W	
R704	1-247-807-11	CARBON	100	5%	1/4W	
R705	1-249-417-11	CARBON	1K	5%	1/4W	
		< SWITCH >				
⚠ S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (E)				
		< TRANSFORMER >				
⚠ T901	1-423-979-11	TRANSFORMER, POWER (EXCEPT US,E)				
⚠ T901	1-426-621-11	TRANSFORMER, POWER (US)				
⚠ T901	1-426-622-11	TRANSFORMER, POWER (E)				
		< TERMINAL >				
* TPT901	1-535-771-11	TERMINAL (US,E,AUS,CH)				
* TPT902	1-535-771-11	TERMINAL (US,E,AUS,CH)				
		< VIBRATOR >				
X201	1-579-833-21	VIBRATOR, CRYSTAL (33.8688MHz) (XE400)				
X201	1-579-834-11	VIBRATOR, CRYSTAL (33.8688MHz) (XE500)				
**********						
*	A-4673-727-A	PANEL BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C501-503						
	1-161-494-00	CERAMIC	0.022uF			25V
C505	1-161-494-00	CERAMIC	0.022uF			25V
		< CONNECTOR >				
* CN501	1-568-864-11	SOCKET, CONNECTOR 21P				
		< FLUORESCENT INDICATOR TUBE >				
FL501	1-517-297-21	INDICATOR TUBE, FLUORESCENT				
		< IC >				
IC501	8-752-869-51	IC CXP82612-021Q				
IC502	8-741-810-59	IC SBX1810-59				
		< TRANSISTOR >				
Q501	8-729-029-67	TRANSISTOR DTC114ESA-TP				
		< RESISTOR >				
R501	1-249-427-11	CARBON	6.8K	5%	1/4W	
R502	1-249-427-11	CARBON	6.8K	5%	1/4W	
R503	1-249-431-11	CARBON	15K	5%	1/4W	
R504	1-249-427-11	CARBON	6.8K	5%	1/4W	
R505	1-249-415-11	CARBON	680	5%	1/4W	
R506	1-249-417-11	CARBON	1K	5%	1/4W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

PANEL | POWER SW

Ref. No.	Part No.	Description				Remark
R507	1-249-419-11	CARBON	1.5K	5%	1/4W	
R508	1-249-421-11	CARBON	2.2K	5%	1/4W	
R509	1-249-423-11	CARBON	3.3K	5%	1/4W	
R510	1-249-427-11	CARBON	6.8K	5%	1/4W	
R511	1-249-415-11	CARBON	680	5%	1/4W	
R512	1-249-417-11	CARBON	1K	5%	1/4W	
R513	1-249-419-11	CARBON	1.5K	5%	1/4W	
R514	1-249-421-11	CARBON	2.2K	5%	1/4W	
R515	1-249-423-11	CARBON	3.3K	5%	1/4W	
R516	1-249-427-11	CARBON	6.8K	5%	1/4W	
R517	1-249-431-11	CARBON	15K	5%	1/4W	
R519	1-249-441-11	CARBON	100K	5%	1/4W	
R520	1-249-427-11	CARBON	6.8K	5%	1/4W	
R530	1-249-429-11	CARBON	10K	5%	1/4W	
R531	1-249-429-11	CARBON	10K	5%	1/4W	
		< SWITCH >				
S501	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)				
S502	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)				
S503	1-554-303-21	SWITCH, TACTILE (EDIT/TIME)				
S504	1-554-303-21	SWITCH, TACTILE (PLAY MODE)				
S505	1-554-303-21	SWITCH, TACTILE (REPEAT)				
S506	1-554-303-21	SWITCH, TACTILE (TIME)				
S520	1-554-303-21	SWITCH, TACTILE (▷)				
S521	1-554-303-21	SWITCH, TACTILE (▮▮)				
S522	1-554-303-21	SWITCH, TACTILE (■)				
S523	1-554-303-21	SWITCH, TACTILE (ENTER)				
S524	1-554-303-21	SWITCH, TACTILE (CLEAR)				
S525	1-554-303-21	SWITCH, TACTILE (CHECK)				
S526	1-554-303-21	SWITCH, TACTILE (▶▶)				
S527	1-554-303-21	SWITCH, TACTILE (◀◀)				
S530	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)				
S531	1-473-452-11	ENCODER, ROTARY (I◁◁ AMS ▷▷I)				
		< VIBRATOR >				
X501	1-577-082-11	VIBRATOR, CERAMIC (4MHz)				
*	1-658-840-11	POWER SW BOARD				
		**********				
		< SWITCH >				
⚠ S801	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)				

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
4	1-776-100-11	WIRE (FLAT TYPE) (23 CORE)	
6	1-776-099-11	WIRE (FLAT TYPE) (21 CORE)	
⚠ 55	1-569-007-11	ADAPTOR, CONVERSION 2P (E)	
⚠ 56	1-569-008-11	ADAPTOR, CONVERSION 2P (CH)	
* 111	1-452-538-11	MAGNET	
⚠ 155	8-848-367-11	PICK-UP BLOCK, OPTICAL KSS-213B/K-N	
158	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
⚠ CNP901	1-558-943-81	CORD, POWER (E)	
⚠ CNP901	1-558-945-21	CORD, POWER (POLAR.SPT-1) (US)	
⚠ CNP901	1-575-651-21	CORD, POWER (AEP,G,EE)	
⚠ CNP901	1-696-845-11	CORD, POWER (AUS)	
⚠ CNP901	1-696-907-11	CORD, POWER (UK)	
⚠ CNP901	1-696-966-11	CORD, POWER (CH)	
M101	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-467-880-11	REMOTE COMMANDER (RM-D420) (XE500)	
	1-558-271-11	CORD, CONNECTION	
	3-810-322-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,CHINESE) (E,AUS,CH)	
	3-810-322-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-810-322-31	MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH) (UK)	
	3-810-322-51	MANUAL, INSTRUCTION (GERMAN) (G)	
	3-810-322-61	MANUAL, INSTRUCTION (SWEDISH,FINNISH) (AEP)	
	3-810-322-71	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN,POLISH) (EE)	
*	3-948-574-01	SHEET (ROLL), PROTECTION (AEP,UK,G,EE)	
	4-962-615-01	COVER, BATTERY (FOR REMOTE COMMANDER) (XE500)	
*	4-979-603-01	INDIVIDUAL CARTON (XE400)	
*	4-979-603-21	INDIVIDUAL CARTON (XE500:US,AUS)	
*	4-979-603-31	INDIVIDUAL CARTON (E,CH)	
*	4-979-604-01	CUSHION (US,E,AUS,CH)	
*	4-979-605-11	INDIVIDUAL CARTON (AEP,UK,G,EE)	
*	4-979-606-01	CUSHION (AEP,UK,G,EE)	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-621-775-10	SCREW +B 2.6X4	
#4	7-621-255-15	SCREW +P 2X3	
#5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	

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